REMARKS

Amendments to the Claims:

Each of claims 1, 7, 14 and 19 has been amended as indicated in the claim listing contained hereinabove. Specifically, each of those claims has been amended for better clarity. More specifically, in each of those claims, the term, "file comprising" has been changed to "file defined by," and the term, "performing a ... process on" has been changed to "performing a ... process involving each of." These amendments are supported at least by the specification at page 3, line 6 through page 4, line 30, and at page 6, lines 4-23.

No new matter has been added by way of amendments to the claims. There are no other amendments to the specification or to the drawings.

Rejection of Claims Under 35 U.S.C. 102:

Each of claims 1-11, and 14-18 has been rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,804,373 to Tresser et al.

According to the United States Patent and Trademark Office ("USPTO") anticipation requires that the *identical* invention must be shown in as complete detail as is contained in the claim. (MPEP 2131.) In other words, a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.

Thus, in accordance with the USPTO requirements, a claim is anticipated only if a single prior art reference shows something that is literally *identical* in each and every way to what is claimed.

The Applicants contend it goes without saying that the question of exactly what is being claimed needs to be answered before a determination can be made in regard to whether the claim is anticipated. Likewise, the question of exactly what the reference teaches or suggests needs to be answered as well. Accordingly, an examination of what is being claimed is presented below, followed by an examination of what the reference teaches or suggests, as well as a comparison of both.

Each of claims 1, 7 and 14 require the following limitations:

applying a predetermined halftoning process to the digital file to generate a digital halftone file defined by a plurality of discrete digital values; and

performing a predetermined mathematical process involving each of the plurality of discrete digital values to thereby generate the authentication key.

In other words, each of claims 1, 7 and 14 requires the generation of, by way of a halftoning process, a group of discrete digital values, wherein all the discrete digital values of the group define a digital halftone file. Each of claims 1, 7 and 14 also requires the performance of a given mathematical process, wherein the process involves *all* of the discrete digital values that define the digital halftone file. That is, each of claims 1, 7 and 14 requires inclusion in the mathematical process of *every single* discrete digital value in the group of digital values that define the entire digital halftone file. Stated in yet another way, *the **entire** halftone file* is included in the mathematical process.

By contrast, Tresser generally discloses means of inserting a watermark into an image, wherein the watermark is an alteration of the data set defining the image such that, on the one hand the alteration of the image is not perceptible to a human, but on the other hand, the alteration of the data set can be recognized by a machine such as a computer. (Tresser, col. 1, lines 9-21, col. 3, lines 5-45.)

According to the teachings of Tresser, a digital signature scheme is employed to create the watermark. (Tresser, col. 6, lines 6-7.) Tresser also teaches that it is preferable to produce the watermark using 1,024 (one thousand, twenty-four) digits of the image data, although a typical image data set will contain much more image data than is used to produce the watermark. (Tresser, col. 6, lines 14-20.)

Furthermore, Tresser teaches that the image (I) undergoes a specific process before the halftoning process. Specifically, Tresser teaches that a new image (I') is computed out of the image (I) by covering the image (I) with a grid of size H-by-V, and then averaging the grey levels on the little rectangles defined by the grid. (Tresser, col. 7, lines 7-9.) Then, a halftoned version (M) of the new image (I') is computed using some preferred halftoning engine. (Tresser, col. 7, lines 12-15.)

Thus, according to the teachings of Tresser, a grey level averaging process is performed on the image before the halftoning process is performed.

Also, according to Tresser, once the halftoned version (M) of the image is produced, it is cut into a plurality of pieces, wherein some of the pieces may be processed in an image compression engine, while others of the pieces may be processed by a digital signature scheme, such as the RSA scheme. (Tresser, col. 9, lines 8-19.) Then, the information coming from part of the halftoned version (M) can be signed in a signature to be placed in the same part or a subset of that part. (Tresser, col. 9, lines 26-32.) Thus, Tresser teaches that the image data is split up into various pieces, and each piece is subjected to a different process such as compression or the digital signature scheme.

In comparison, the claimed invention requires generating a halftone version of an image defined by a data set, and then employing a given mathematical process that involves the entire data set. That is, the claimed invention requires that the entire data set defining the halftone version of the image is processed in accordance with a given process, while Tresser teaches inserting a watermark in the image data, wherein the watermark is generated by using only a small portion of the data set defining a halftone version of the image, and wherein more than one process is employed to process different pieces of the data set.

Furthermore, and just as importantly, the claimed invention requires that the halftone image is produced from the original image, while Tresser teaches that a new image is first computed out of the original image by covering the original image with a grid of size H-by-V, and then averaging the grey levels on the little rectangles defined by the grid, as is discussed above.

In view of the above examination and comparison of what is claimed and of what is taught or suggested by the reference, it is evident that the reference does not show something that is literally *identical* in each and every way to what is claimed. Rather, on the contrary, it is evident that the reference shows something that is substantially different from what is claimed.

Therefore, for at least the reasons set forth above, the Applicants submit that Tresser does not anticipate claims 1, 7 and 14.

Furthermore, inasmuch as claims 2-6 depend from claim 1, and claims 8-11 depend from claim 7, and claims 15-18 depend from claim 14, it is axiomatic that

claims 2-6, 8-11 and 15-18 are also not anticipated by Tresser for at least the reasons that claims 1, 7 and 14 are not anticipated by Tresser, as explained above.

Accordingly, the Applicants respectfully request that the rejections of each of claims 1-11 and 14-18 be withdrawn and that those claims be allowed.

Rejection of Claims Under 35 U.S.C. 103:

Each of claims 12 and 13 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Tresser in view of U.S. Patent No. 5,598,473 to Linsker et al.

Each of claims 19, 22 and 23 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Tresser in view of U.S. Patent Application Publication No. 20040181671 by Brundage.

Each of claims 20, 21, 24 and 25 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Tresser in view of Brundage and further in view of Linsker.

According to the USPTO, obviousness requires, among other things, that the prior art references, when combined, must teach or suggest *all* the claim limitations. (MPEP 2142.)

In rejecting claim 19, the Examiner contends that Tresser discloses all of the claim limitations except for displaying a copy of the authentication key to a user via one of a printer or a user display. The Examiner also contends that this limitation that is not disclosed by Tresser is disclosed by Brundage.

The Applicants note that claim 19 contains the following limitations:

applying a predetermined halftoning process to the digital file to generate a digital halftone file defined by a plurality of discrete digital values; and

performing a predetermined mathematical process involving each of the plurality of discrete digital values to thereby generate the authentication key.

As is explained above with respect to the claim rejections under 35 U.S.C. 102, Tresser does not teach or suggest these limitations of claim 19. The Examiner does not rely on Brundage for disclosing these limitations of claim 19, and the Applicants agree that Brundage does not teach or suggest these limitations.

Therefore, claim 19 is not obvious over Tresser in view of Brundage at least for the reason that those references do not teach or suggest all the limitations of claim 19. Accordingly, the Applicants respectfully request that the rejection of claim 19 be withdrawn, and that claim 19 be allowed.

The Applicants note that claim 23 contains the following limitations:

1) a sender computer configured to provide the electronic document file in the form of a sender initial digital file;

2) a sender printer configured to:

(a) receive the sender initial digital file;

(b) apply a predetermined halftoning process to the sender initial digital file to generate a first digital halftone file comprising a first plurality of discrete digital values;

(c) perform a predetermined mathematical process on the first plurality of discrete digital values to thereby generate a sender authentication key; and

(d) display the sender authentication key to a sender;

3) a receiver computer configured to receive the electronic document file from the sender as a receiver initial digital file;

4) a receiver printer configured to:

(a) receive the receiver initial digital file;

(b) apply the predetermined halftoning process to the receiver initial digital file to generate a second digital halftone file comprising a second plurality of discrete digital values;

(c) perform the predetermined mathematical process on the second plurality of discrete digital values to thereby generate a receiver authentication key; and

(d) display the receiver authentication key to a receiver.

The Examiner contends that all of the limitations of claim 23 are disclosed by Tresser, except for displaying a copy of the authentication key, which the Examiner contends is disclosed by Brundage.

However, after a thorough search of Tresser, the Applicants find no teaching or suggestion of both a sender computer and a receiver computer configured as

claimed, nor do the Applicants find any teaching or suggestion of both a sender printer and a receiver printer configured as claimed. Rather, Tresser discloses, at most, a single computer and a single printer. (Tresser, col. 8, lines 36-40, Fig. 3, col. 10, lines 31-35, Fig. 6, col. 10, lines 48-67, Fig. 7.)

A thorough search of Tresser also fails to reveal any teaching or suggestion of any means to *perform a predetermined mathematical process on the first plurality of discrete digital values to thereby generate a sender authentication key* **AND** *perform the predetermined mathematical process on the second plurality of discrete digital values to thereby generate a receiver authentication key*.

The Applicants have meticulously studied the portions of Tresser cited by the Examiner and do not find any teaching or suggestion of the claim limitations, as explained above.

Moreover, the Applicants note that, according to the USPTO, a *prima facie* case of obviousness may also be rebutted by showing that the art, in any material respect, teaches away from the claimed invention. (MPEP 2144.05.) A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be led in a direction divergent from the path that the applicant took. (In re Gurley, 27 F.3d 551, 31 USPQ 2d 1130, 1131 (Fed. Cir. 1994).)

Here, Tresser teaches that it is preferable to provide a scanner with "enough computing power to dispense of the computer." (Tresser, col. 9, line 66 through col. 10, line 3.) That is, Tresser teaches that it is preferable to not have a computer. Thus, a person of ordinary skill in the art, upon reading Tresser, would be led in a direction divergent from the pat the Applicants took because Tresser teaches that it's preferable to not have a computer, while the Applicants claim requires two computers. Therefore, Tresser teaches away from the claimed invention.

For at least the reasons set forth above, claim 23 is not obvious over Tresser in view of Brundage. Accordingly, the Applicants respectfully request that the rejection of claim 23 be withdrawn, and that claim 23 be allowed.

It is axiomatic that if an independent claim can be shown to be allowable over a reference under 35 USC 102, then each and every claim which depends therefrom should also be allowable under 35 USC 102. (That is, if an independent claim includes a limitation which differentiates such claim from a cited reference under 35 USC 102, than any claim which depends from this independent claim also *inherently*

includes the same limitation, and is therefore patentable over the cited reference for at least the same reason as the independent claim is patentable over the reference.) Furthermore, it is axiomatic that if an independent claim is allowable under 35 USC § 102, then there is no possible way that any respective dependent claim can be obvious under 35 USC § 103.

Inasmuch as claims 12 and 13 depend from independent claim 7, it follows that claims 12 and 13 are not obvious for at least the reasons set forth above with respect to the arguments against the rejection of claim 7. Accordingly, the Applicants respectfully request that the rejections of claims 12 and 13 be withdrawn and that those claims be allowed.

Similarly, inasmuch as claims 20, 21 and 22 depend from independent claim 19, it follows that claims 20, 21 and 22 are not obvious for at least the reasons set forth above with respect to the arguments against the rejection of claim 19. Accordingly, the Applicants respectfully request that the rejections of claims 20, 21 and 22 be withdrawn and that those claims be allowed.

Likewise, inasmuch as claims 24 and 25 depend from claim 23, it follows that claims 24 and 25 are not obvious for at least the reasons set forth above with respect to the arguments against the rejection of independent claim 23. Accordingly, the Applicants respectfully request that the rejections of claims 24 and 25 be withdrawn and that those claims be allowed.

SUMMARY

The Applicants believe this communication constitutes a full and complete response to the Office action dated May 25, 2007, in accordance with all applicable requirements. The Applicants therefore respectfully requests timely allowance of claims 1-25.

Respectfully submitted,
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